



Advanced Crafting for Invector

Eadon Advanced Crafting for Invector TPC

Version 2.1

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Introduction

Eadon Advanced Crafting is an add-on for Invector's Third Person Controller asset for the Unity game engine. The goal of this asset is to provide advanced crafting functionality to any game implemented with Invector TPC.

The following functionalities are implemented:

- Crafting in game, not inside the inventory
- Based on Crafting Recipes
- Everything can be used to craft, no need for dedicated crafting ingredients
- Implicit recipes (known automatically by everyone)
- Explicit recipes which need to be found/bought
- Recipe categories for easy filtering
- Interruptible crafting
- If crafting is interrupted and the recipe does not allow interruptions, ingredients can be (optionally) lost
- Crafting by pressing a button or by holding a button
- Automatic success or random chance of success
- Crafting conditions
 - Optional requirement for tools
 - Optional requirement for location
- Integration with Eadon RPG for Invector
 - Optional requirement for race
 - Optional requirement for Class
 - Optional requirement for Alignment
 - Optional requirement for Skill
 - Optional requirement for Talent
- Custom animations while crafting, specific to the recipe
- Crafting machines

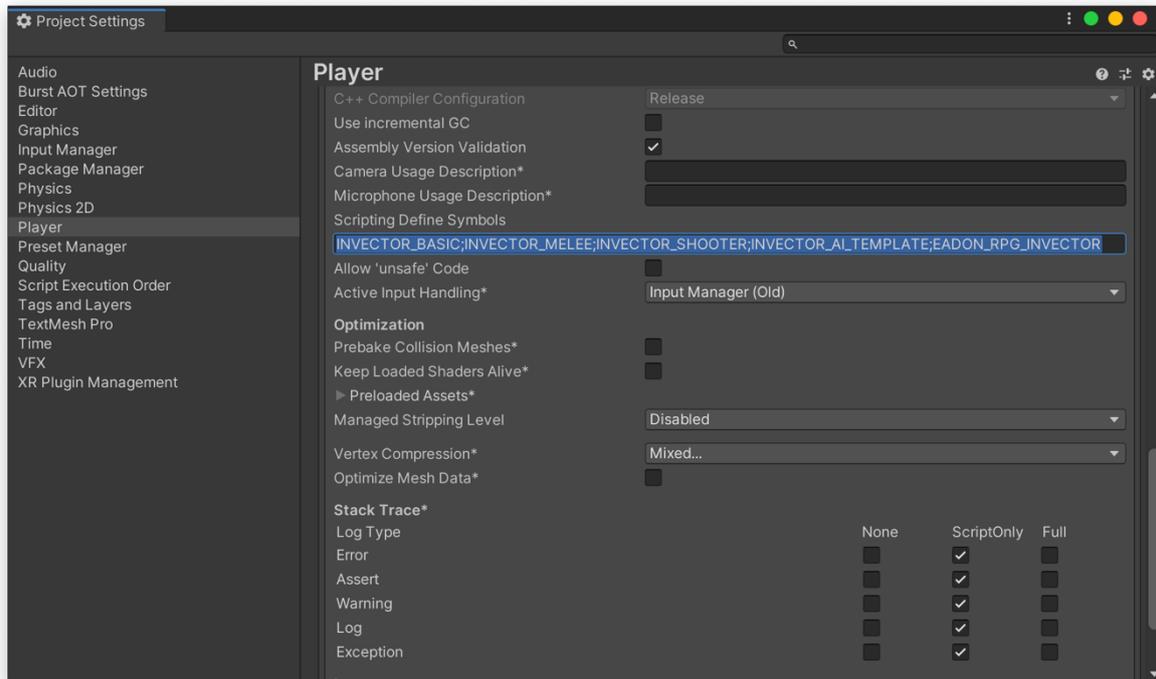
This add-on is currently compatible with Invector TPC version 2.5.3 and higher (Melee and Shooter) and tested on Unity 2018.4.30 and higher.

Changelog

V 1.0	Initial release
V 1.1	Bug fixes and quality of life improvements
V 1.2	Added categories for recipes Configurable colors for UI messages
V 1.3	Added flag to determine whether to auto equip crafted items or not Added Crafting Machines (requires Eadon RPG for Invector)
V 1.4	Crafting multiple items in one gp
V 1.5	Update to Invector 2.6.4 Added crafting sounds
V 2.0	New project structure Support for networking (Mirror, Fish-Net and Unity Networking for Game Objects, separate assets) Bug fixes
V 2.1	Added demo scene for crafting machines using Advanced RPG Added a CraftingMachineTrigger which does not need vTriggerGenericAction Bug fixes

Prerequisites

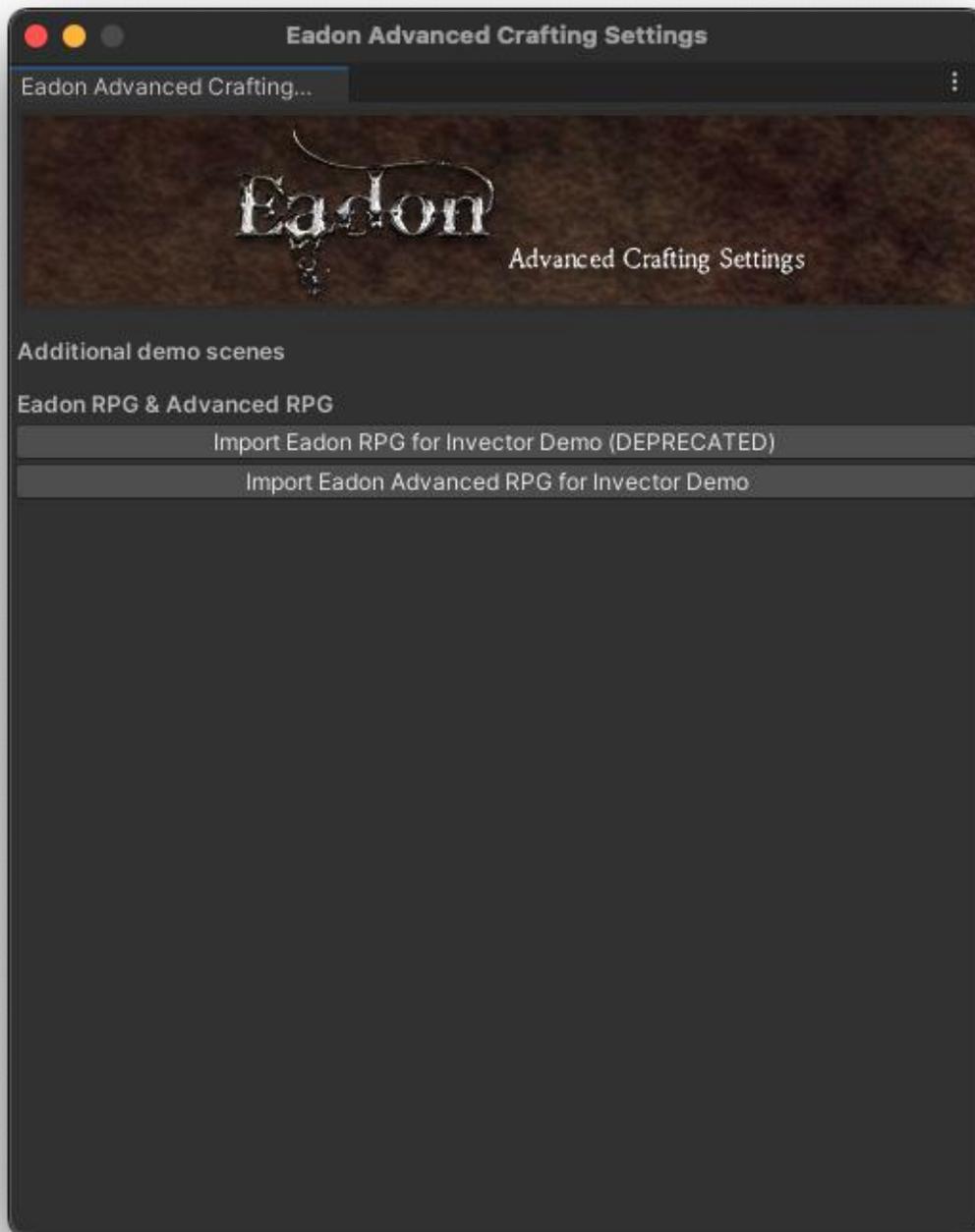
Eadon Advanced Crafting has support for Eadon RPG for Invector, which is automatically enabled if Eadon RPG for Invector v1.4 is installed. To enable support for previous versions, please add `EADON_RPG_INVECTOR` to the scripting defines list in Player options:



In addition, several errors will appear as soon as the add-on is imported because the code relies on the presence of a `ItemType`. In order to fix this error, you need to go to `Invector/Inventory/Item Enums/Open ItemEnums Editor` and click on “REFRESH ITEMENUMS” at the bottom.

Eadon Advanced Crafting requires TextMesh Pro, make sure it’s installed (with the Essential Resources as well). In recent versions of Unity, it comes preinstalled (but the essential resources need to be installed from the Window -> TextMesh Pro menu), in older versions it needs to be added manually.

The crafting machine functionalities relies on the stash system of **Eadon RPG for Invector** or **Eadon Advanced RPG for Invector**. If you have one of these assets in your project, you can import a demo scene for crafting machines using the **Eadon/Advanced Crafting/Settings** menu:



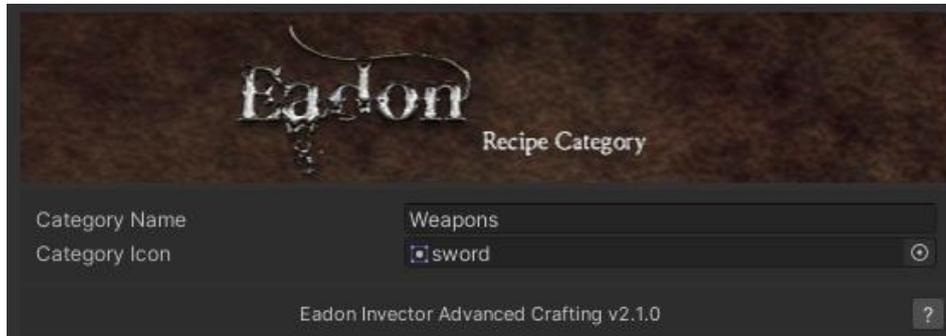
If an asset is detected in the project, the corresponding button will be enabled and visible.

Configuration

Before the crafting system can be used, it must be configured. Eadon Advanced Crafting is configured through a set of ScriptableObjects that determine what is available to the system. All Eadon Advanced Crafting ScriptableObjects can be created using commands found under the **Assets -> Create -> Eadon Crafting** menu.

Recipe Category

Recipe Categories allow for easy filtering of recipes in the UI. They look like this:



The two fields are the name of the category and the category icon, to be displayed in the UI (see below).

Crafting Recipe

Crafting Recipes are the core of the system as they define what can be crafted and how. They look like this:



Recipe	
Recipe Name	<input type="text" value="Axe Recipe"/>
Recipe Icon	<input type="text" value="axes"/> 
Recipe ID	<input type="text" value="1"/>
Category	<input type="text" value="Weapons Recipe Category (Recipe Category)"/> 
Is Implicit	<input checked="" type="checkbox"/>
Can Be Interrupted	<input type="checkbox"/>
Consume If Not Finished	<input type="checkbox"/>
Crafting Time	<input type="text" value="5"/>
Ingredients	
▶ Ingredients	<input type="text" value="2"/>
Result	
Automatic Success	<input type="checkbox"/>
Success Chance	<input type="range" value="0"/>
Output Item ID	<input type="text" value="0"/>
▶ Multiple Output Item ID	<input type="text" value="0"/>
Output Amount	<input type="text" value="1"/>
Conditions	
Requires Tools	<input type="checkbox"/>
Requires Locations	<input type="checkbox"/>
Eadon RPG Conditions	
Requires Race	<input type="checkbox"/>
Requires Class	<input type="checkbox"/>
Requires Alignment	<input type="checkbox"/>
Requires Skill	<input type="checkbox"/>
Requires Talent	<input type="checkbox"/>
Eadon Advanced RPG Conditions	
Requires Race	<input type="checkbox"/>
Requires Class	<input type="checkbox"/>
Requires Alignment	<input type="checkbox"/>
Requires Skill	<input type="checkbox"/>
Requires Talent	<input type="checkbox"/>
Experience	
XP	<input type="text" value="0"/>
Animations	
Start Animation	<input type="text" value="Start Task"/>
Particles	
Craft Particles	<input type="text" value="None (Game Object)"/> 
Particle Offset	X <input type="text" value="0"/> Y <input type="text" value="0"/> Z <input type="text" value="0"/>
Audio	
Craft Audio Clip	<input type="text" value="None (Audio Clip)"/> 
Craft Audio Delay	<input type="text" value="0"/>

Eadon Investor Advanced Crafting v2.1.0 

The fields are as follow:

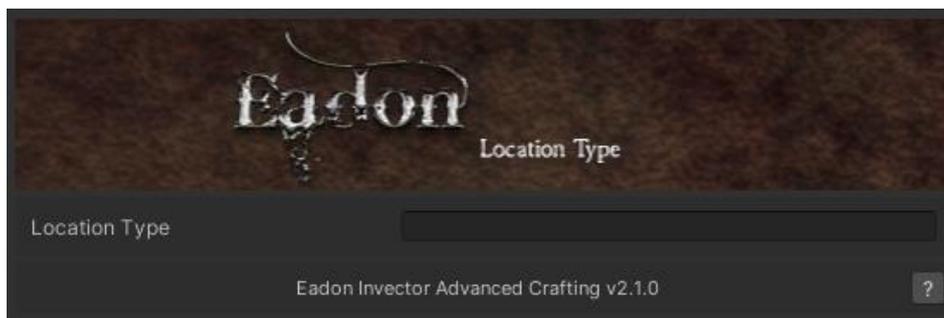
Field name	Purpose
Recipe Name	The name of the recipe, used by the UI
Recipe Icon	The icon of the recipe, used by the UI
Recipe ID	The ID of the recipe, link to the vItem
Category	The category of the recipe
Is Implicit	An implicit recipe is known by everyone and doesn't need to be in the player inventory
Can Be Interrupted	A flag to indicate if the recipe allows interrupting and resuming
Consume If Not Finished	A flag to indicate if the ingredients are consumed if the crafting is interrupted
Crafting Time	How long it takes to craft, in seconds
Ingredients	An array of vItem id and quantity for every component required
Automatic Success	A flag to indicate if crafting is automatically successful or not
Success Chance	The chance of successful crafting, only appears if automatic success is disabled
Output Item ID	The vItem ID of the resulting item
Output Amount	The amount of output item crafted
Requires Tools	A flag to indicate if tools are required to craft. Tools are not consumed
Tools ID	A list of vItem IDs for the tools. Only visible if Requires Tools is selected
Requires Locations	A flag to indicate if a specific location is required for this recipe to be crafted
Location Types	A list of LocationTypes (see below). Only visible if Requires Locations is selected
Requires Race *	A flag to indicate if a specific race is required for this recipe to be crafted
Required Race *	The required race. Only visible if Requires Race is selected
Requires Class *	A flag to indicate if a specific class is required for this recipe to be crafted
Required Class *	The required class. Only visible if Requires Class is selected
Requires Alignment *	A flag to indicate if a specific alignment is required for this recipe to be crafted
Required Alignment *	The required alignment. Only visible if Requires Alignment is selected
Requires Skill *	A flag to indicate if a specific skill is required for this recipe to be crafted
Required Skill *	The required skill. Only visible if Requires Skill is selected
Requires Talent *	A flag to indicate if a specific talent is required for this recipe to be crafted
Required Talent *	The required talent. Only visible if Requires Talent is selected
Start Animation	The animation to play when crafting starts
Craft Particles	A VFX prefab to spawn when crafting starts
Particle Offset	The offset from the player position to spawn the craft VFX

Craft Audio Clip	The audio clip to play when crafting
Craft Audio Delay	The delay to start playing the audio clip

All the fields marked with * will appear only if Eadon RPG for Invector or Eadon Advanced RPG for Invector is installed in your project (in the picture above, both add-ons are installed in the project).

Location Type

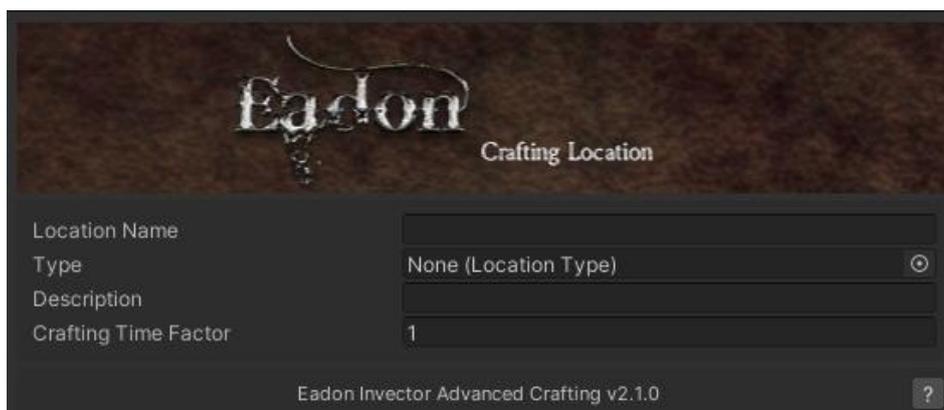
Location Types are like tags for locations. They are used to mark the types of locations so that multiple crafting locations can share the same type. They look like this:



The field is a freeform string.

Crafting Location

Crafting Locations represent places where specific crafting activities can take place, such as forges, alchemist labs, workbenches etc. They look like this:



The fields are:

Field name	Purpose
Location Name	The name of the location
Type	The LocationType of this location
Description	A description of this location
Crafting Time Factor	A multiplier for the crafting time (less than 1 speeds up, more than 1 slows down), useful to determine “quality” of the location

Crafting Recipe Manager

The Crafting Recipe Manager is a scriptable object which stores a reference to all Crafting Recipes and all Recipe Categories available. It looks like this:

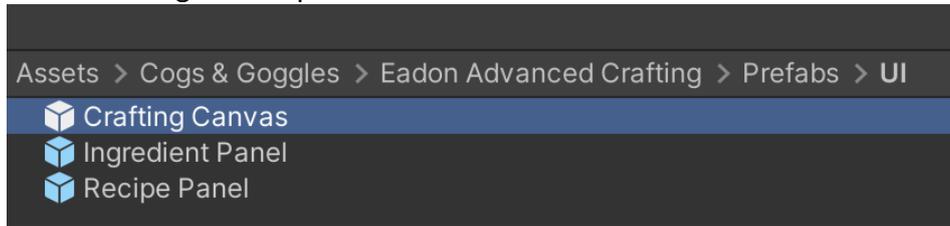


When you create a new recipe or category, it needs to be added here in order for it to be available in game.

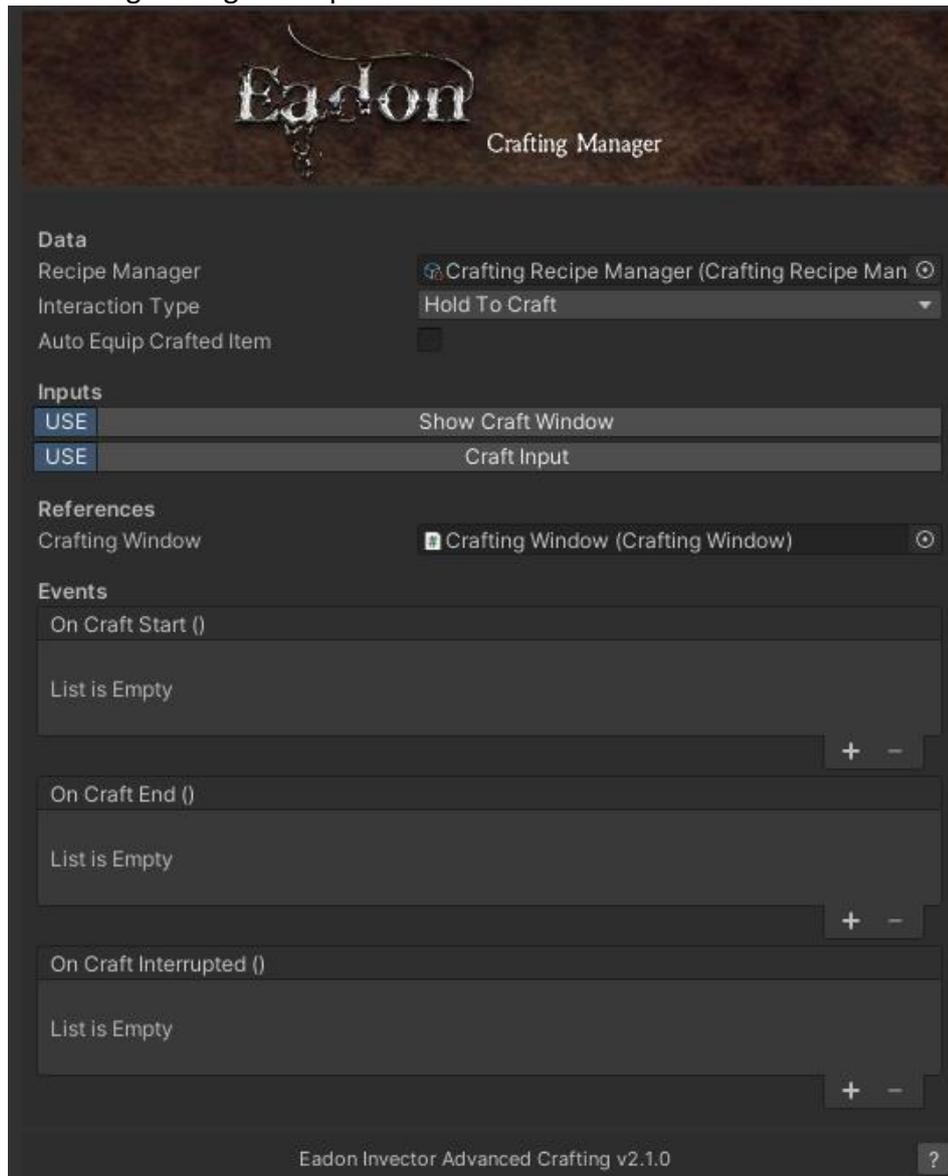
Setting up a character to use Advanced Crafting

Setting up a character to use this addon is very simple and requires two steps:

- 1) Add the Crafting Canvas prefab to the character:



- 2) Add the Crafting Manager component to the character:



The fields are:

Field name	Purpose
Recipe Manager	The Crafting Recipe Manager to use

Interaction Type	Choice of Simple Press and Hold to Craft
Auto Equip Crafted Item	A flag to auto equip crafted items or not
Show Craft Window	The input to show the craft window, by default mapped to the L key
Craft input	The input to actually craft, by default mapped to the K key
Crafting Window	A reference to the crafting window object (child of the crafting UI prefab)
On Craft Start	An event triggered when crafting starts
On Craft End	An event triggered when crafting ends
On Craft Interrupted	An event triggered when crafting is interrupted

The crafting UI (which is meant to be customised based on your UI standards) looks like this:

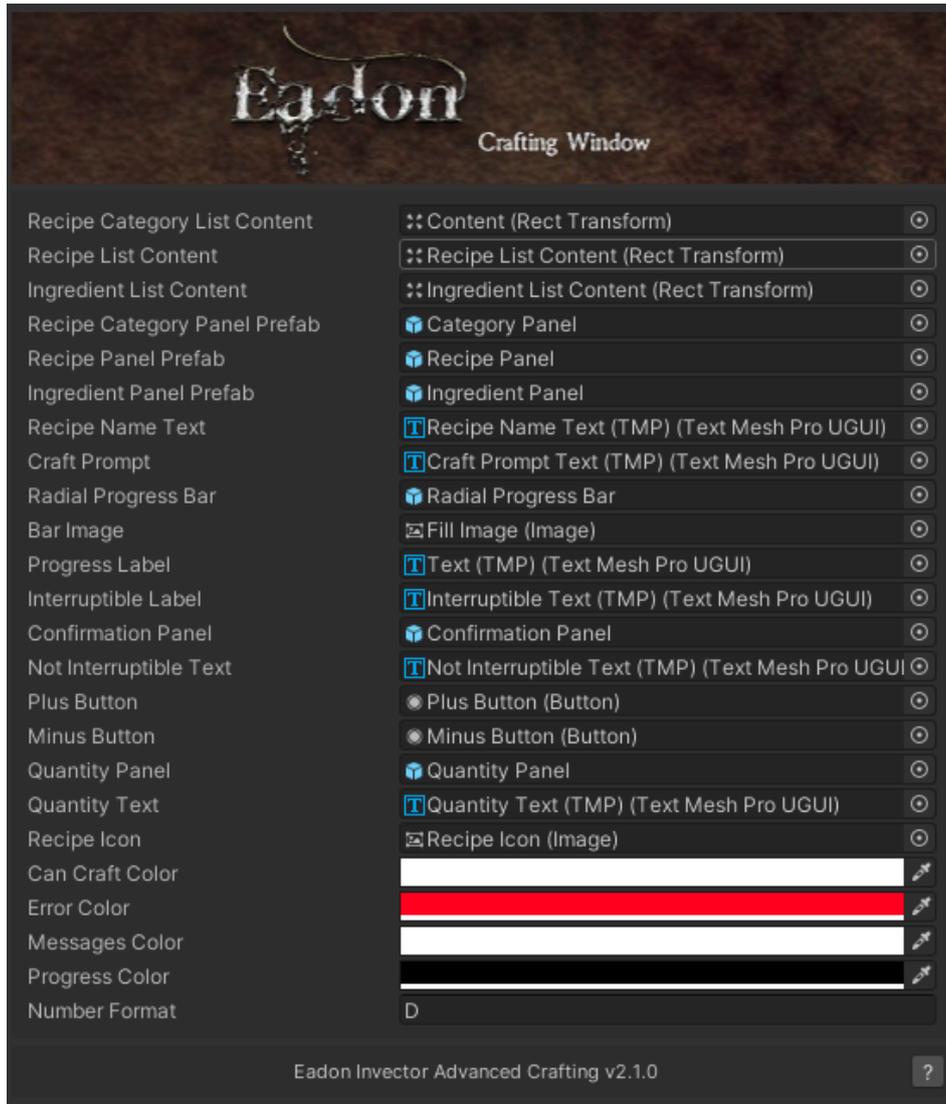


On the left is a list of all the categories of recipe defined in the system and the list of recipes the player has access to. This list includes all implicit recipes and all the explicit recipes in his inventory, filtered by the selected category. When active, the mouse cursor appears, and clicking on a recipe will tell you which ingredients are needed.

If all the ingredients are available, a prompt appears to let you start crafting. You can adjust the quantity (if you have enough ingredients) using the +/- buttons. The quantity panel The Crafting Manager listens to the vThirdPersonController and interrupts the crafting if the character is hit.

Customizing the UI

The UI is handled through a master component, called CraftingWindow. It's located in the first child of the Crafting Canvas prefab and looks like this:



The customizable fields are the 5 bottom ones, the others are references to components or instantiable prefabs (see below).

The fields are:

Field name	Purpose
Can Craft Color	The color of the message indicating that a recipe can be crafted
Error Color	The color of the various error messages
Messages Color	The color of all the other messages
Progress Color	The color of the crafting progress indicator
Number Format	The format of the progress percentage. Use D for an integer (no decimals) of Fx for decimals (where x is the number of decimal digits to show)

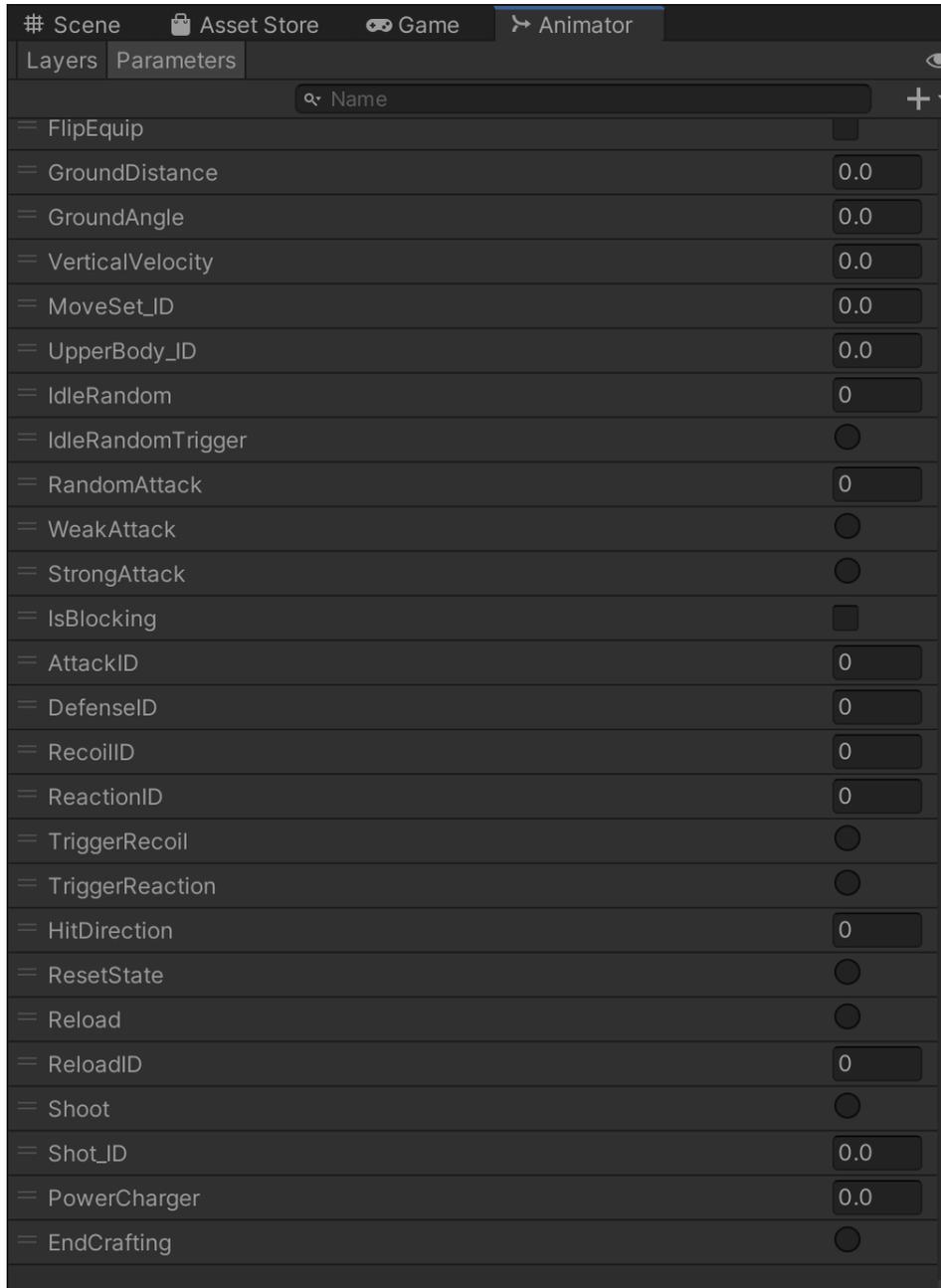
The various lists display categories, recipes and ingredients by instantiating panel prefabs of the appropriate type. These prefabs are located in Assets/Cogs & Goggles/Eadon Advanced Crafting/Prefabs/UI and all contain a mandatory script holding references to the various needed fields.

Setting up a character to use Advanced Crafting

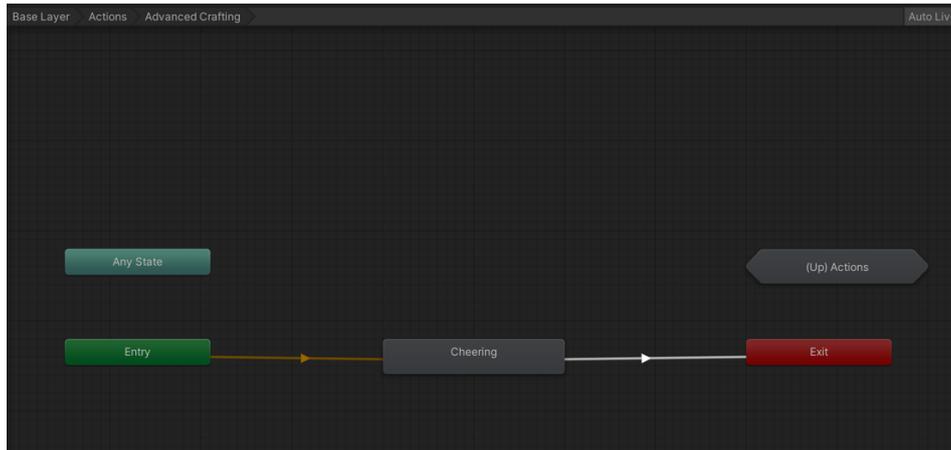
These prefabs can be customized freely AS LONG AS the component stays in place and holds valid references. You can add more images, labels, subpanels, etc

Configuring the Animator

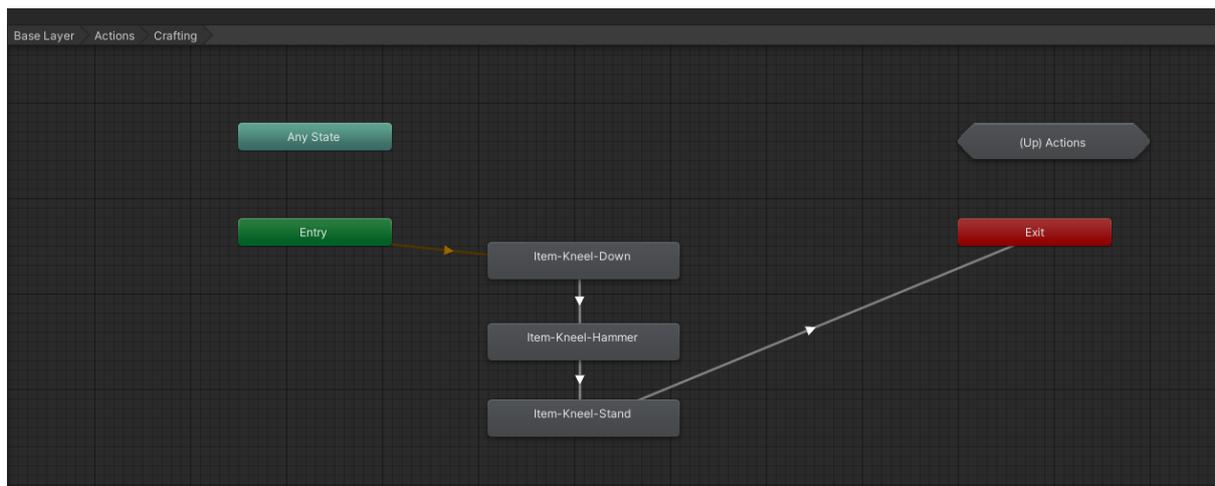
A Crafting Recipe lets you specify a custom animation to be played while the character is crafting. If the field is not empty, as soon as the character starts crafting, the corresponding animation is played. In order for this system to work, you need to add a trigger named EndCrafting to you animator controller:



The example animator comes with a simple “Cheering” animation set up like this:



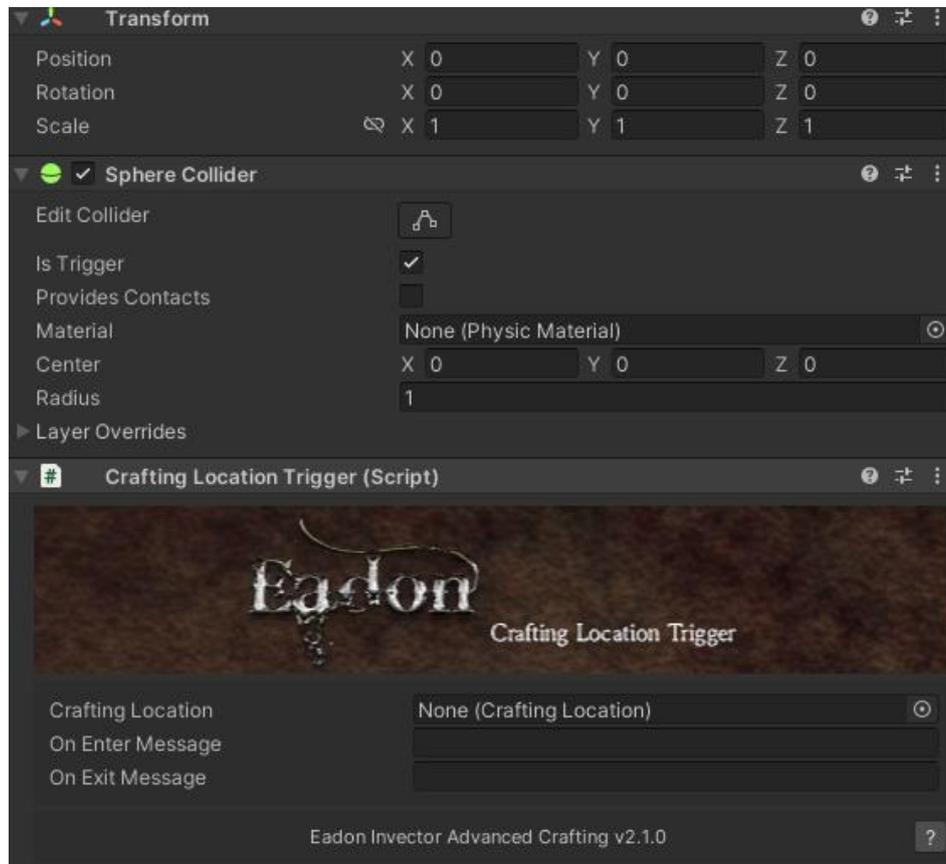
But this could be expanded further, for example in a setup similar to this:



Where the start animation points to a kneeling animation which transitions to a looping hammering animation and the trigger transitions to a stand-up animation which goes then back to locomotion. Please note that this example is not included in the asset.

Using Crafting Locations

Crafting Location are easy to use. You just need to pick the scene element (or create an empty game object) and add a suitably sized trigger collider and the Crafting Location Trigger. It looks like this:



The fields are:

Field name	Purpose
Crafting Location	The Crafting Location scriptable object for this location
On Enter Message	A message displayed via the vHUDManager at the top of the screen when the character enters the crafting location
On Exit Message	A message displayed via the vHUDManager at the top of the screen when the character exits the crafting location

The trigger will set the location on the Crafting Manager automatically.

Crafting Machines

Crafting Machines are a new feature which require the presence of **Eadon RPG for Invector** in your project as it leverages the stash system introduced in that addon.

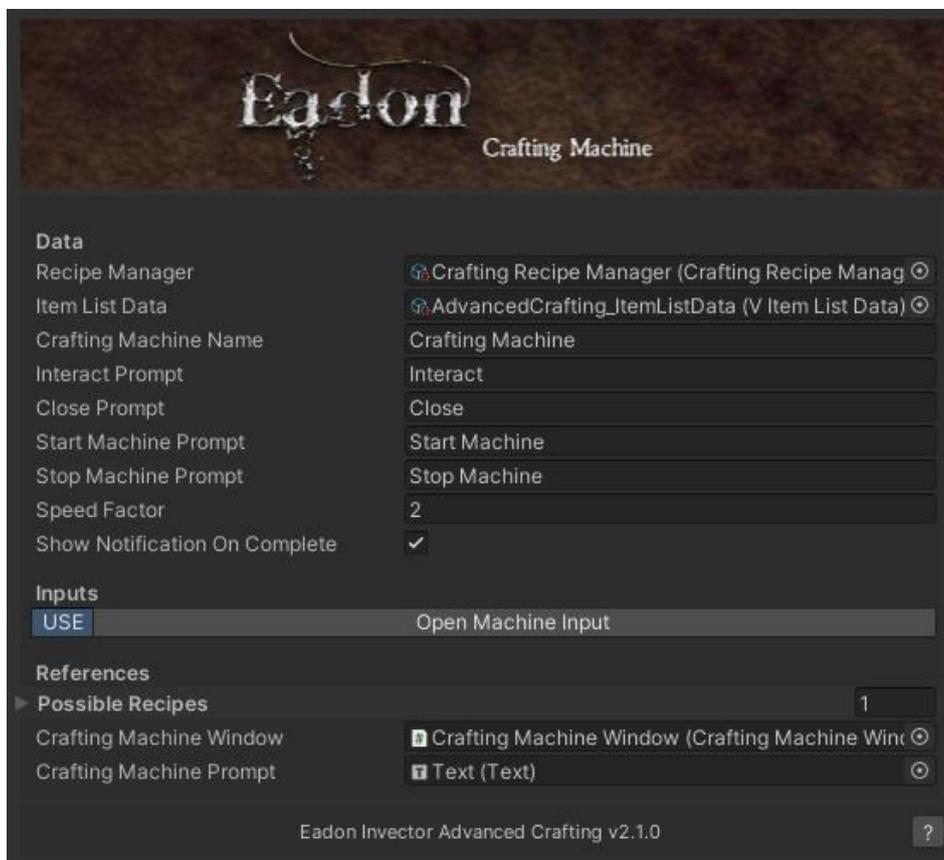
A crafting machine is a combination of a stash (used to dump ingredients into the machine and retrieve crafted items) and a standalone crafting engine.

In order to use a crafting machine, you need to setup the stash system as per the documentation of **Eadon RPG for Invector** or **Eadon Advanced RPG for Invector**.

After that, create a game object and do the following:

- 1) Add a stash as a child object
- 2) Add a Crafting Machine Canvas prefab as a child
- 3) Add a Crafting Machine Trigger prefab as a child
- 4) Add a EadonCraftingMachine component

The EadonCraftingMachine component looks like this:

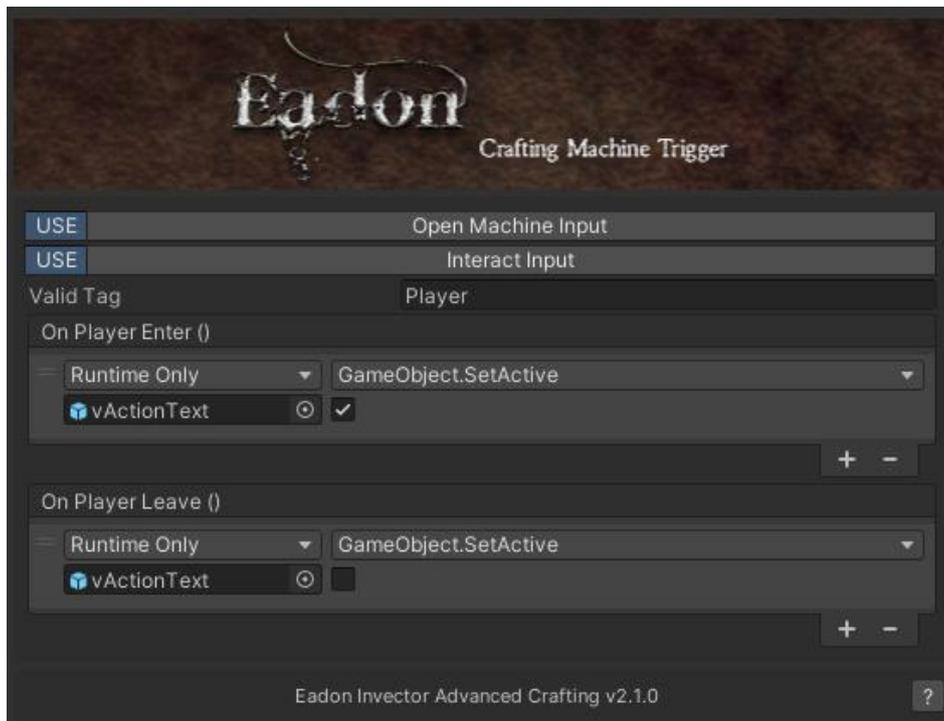


The fields are:

Field name	Purpose
Crafting Location	The Crafting Location scriptable object for this location
Recipe Manager	A reference to your recipe manager

Item List Data	A reference to your vItemListData
Crafting Machine Name	The name of this crafting machine (used in the UI and the notifications)
Interact Prompt	The interaction prompt message to open the UI
Close Prompt	The interaction prompt message to close the UI
Start Machine Prompt	The interaction prompt message to start the machine
Stop Machine Prompt	The interaction prompt message to stop the machine
Speed Factor	A multiplier for the standard crafting time defined in the recipe. Values greater than 1 increase the crafting time, while values lower than 1 reduce the time
Show Notification On Complete	A flag to indicate if the machine should notify finishing crafting something in the vHUDController text display area
Open Machine Input	The GenericInput to use to open the machine stash interface
Possible Recipes	A list of all the CraftingRecipes the machine can craft
Crafting Machine Window	A reference to the CraftingMachineWindow component (child of the Crafting Machine Canvas prefab)
Crafting Machine Prompt	A reference to the Text component of the vActionText child of the Crafting Machine Trigger

The Crafting Machine Trigger prefab contains a custom component which handles all interactions with the crafting machine and the stash:



You can see an example in the Crafting Machine Demo scene.

When the player approaches the crafting machine, two prompts appear:



The bottom one opens the stash interface to transfer ingredients and finished products between the player and the machine. The top one opens the machine interface, which looks similar to and works the same way as the in game crafting interface:



If the machine has enough ingredients, you can place items in the queue. Queuing items removes the ingredients from the stash. Clearing the queue puts the ingredients back in the stash. You can queue multiple copies of the same item by adjusting the quantity with the +/- buttons (the quantity panel is visible only if you have enough ingredients to craft more than one item).

Once elements are in the queue, the machine can be started. If you open the interface when the machine is running, you can stop it. If you stop a machine, the recipe you're currently crafting is interrupted and the ingredients are either placed back in the stash or destroyed depending on the settings on the recipe.